

**Commonwealth of Massachusetts  
Office of Consumer Affairs & Business Regulation  
Division of Energy Resources**

**RENEWABLE ENERGY PORTFOLIO STANDARD  
ADVISORY RULING**

**FOR  
RUSSELL BIOMASS POWER PLANT**

**April 7, 2005**

**1. Advisory Ruling Request by Russell Biomass LLC**

Russell Biomass LLC (hereafter Russell) has requested that the Massachusetts Division of Energy Resources (hereafter, DOER or the Division) provide an Advisory Ruling with regard to the qualification under the Massachusetts Renewable Energy Portfolio Standard (RPS) of a proposed new, 50 MW, biomass-fueled, Generation Unit in Russell, Massachusetts (MA).<sup>1</sup> This document is DOER's response to that request.

The RPS regulations, at 225 CMR 14.06(5),<sup>2</sup> provide an opportunity for a Generation Unit owner or developer "to request an advisory ruling from the Division to determine whether a Generation Unit would qualify as a New Renewable Generation Unit."<sup>3</sup>

**2. Summary Description of the Proposed Russell Project**

The proposed new biomass Generation Unit, the Russell Biomass Power Plant, would be constructed on 14 acres of a 70 acre, industrial-zoned site in Russell, MA, formerly owned and occupied by the Westfield River Paper Company, which ceased operation in 1995. As stated in the request, the 50 MW, bubbling fluidized-bed plant would be fueled primarily by "whole tree chips and clean wood waste products, e.g., construction and demolition waste" and possibly by "paper conversion byproducts."

This Advisory Ruling addresses the proposed project's fuels, technologies, and air emissions.

**3. Discussion of the Project's Proposed Biomass Fuels**

The proposed plant would burn whole tree chips, construction and demolition (C&D) wood, and possibly also what the request terms "paper conversion byproducts." The whole tree chips meet the definition of Eligible Biomass Fuel in the RPS regulations at 14.02. The C&D wood – provided that it meets the material separation, storage, and handling criteria of the MA Department of Environmental Protection (DEP) for such materials – also meets that definition, as explained below.

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<sup>1</sup> The Russell request was made in a letter from James M. Ramsey to Howard Bernstein at DOER, dated November 9, 2004. Some additional information, including an amendment from the original 40 MW capacity to 50 MW, was provided in an e-mail message from Mr. Ramsey dated March 9, 2005.

<sup>2</sup> Hereafter, all references to the RPS regulations will be to sections of 225 CMR 14.00.

<sup>3</sup> More information about Advisory Rulings for MA RPS is at <http://www.mass.gov/doer/rps/advisory.htm>.

DOER's position with regard to C&D-derived wood was stated in its "Summary of Public Comments and Agency Responses" dated February 6, 2002, and in a letter from the DEP to DOER dated January 8, 2002.<sup>4</sup> As stated in that letter, wood derived from C&D waste, which might include some "wood containing paints, stains, coatings or preservatives . . . can properly be considered as an eligible biomass fuel . . . as one type of 'organic refuse-derived fuel that is collected and managed separately from municipal solid waste.'" In addition, DOER has found C&D wood to be eligible in earlier Advisory Rulings for EcoPower, Boralex, Greenville Steam Company, Pine State Power, and GenPower.<sup>5</sup>

"Paper conversion byproducts" would be eligible only to the extent that their contents also meet the regulatory definition at 14.02. If that fuel contains non-biomass derived materials, such as plastic coating, then it would have to be analyzed as to the heat contents of the eligible (biomass) and the ineligible (non-biomass) contents, as well as the heat contents of any other fuels being used, and the provisions of the "Co-firing with Ineligible Fuels Waiver" in the RPS regulations at 14.05(3) would apply. The relevant provisions in that section are the following:

- (a) The portion of the total electrical energy output that qualifies as New Renewable Generation in a given time period shall be equal to the ratio of the net heat content of the Eligible New Renewable Fuel consumed to the net heat content of all fuel consumed in that time period.
- (b) If using an Eligible Biomass Fuel, the entire Generation Unit must meet the requirements of a low emission, advanced biomass power conversion technology as set forth in 225 CMR 14.05 (1) (a) 6.

In addition, in accordance with the provisions at 14.06(2)(b)2, DOER would provide an opportunity for public comment on an eventual Statement of Qualification Application.

#### **4. Discussion of the Project's Proposed Biomass Technology**

The RPS regulations at 14.05(1)(a)6 provide that the qualification of biomass generation units is limited to "low emission, advanced biomass power conversion technologies using an Eligible Biomass Fuel." These criteria are designed to insure that the RPS provides incentives for older, dirtier technologies to be replaced by cleaner and more efficient technologies. DOER also believes that biomass technologies should improve over time in response to the incentives created by the RPS, in addition to other regulatory and market forces responsible for continued technological progress in the electricity generation sector generally.

Russell has requested that this Advisory Ruling be limited to its current plan to use bubbling fluidized bed (FB) technology, which, according to its 11/9/05 letter, would come from one of several possible suppliers – Foster Wheeler, Babcock & Wilcox, and Energy Products of Idaho. In several previous Advisory Rulings – for PSNH's proposed re-tooling and repowering of one unit at its Schiller Station in New Hampshire, proposed new plants by EcoPower and GenPower, and the retooling of biomass plants by Boralex, Burlington Electric, and Greenville Steam – DOER has discussed FB technology and determined that modern, new FB technology represents an improvement over the early generation FB technology of the two 1986 Indeck boilers in

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<sup>4</sup> DOER's February 6, 2002 "Summary of Public Comments and Agency Responses" (see item 1.E on page six) and the DEP's January 8, 2002 letter, to which said item 1.E makes reference, can be accessed under the Public Comment Documents section near the top of this web page: <http://www.state.ma.us/doer/rps/delproc.htm>.

<sup>5</sup> Those Advisory Rulings can be accessed via a link at <http://www.mass.gov/doer/rps/advisory.htm>.

Maine, and that the improved technology proposed for those projects meets the “advanced technology” criterion of the RPS regulations.<sup>6</sup> Consistent with those determinations, and assuming that the bubbling fluidized bed technology installed by Russell is new and of modern design, DOER finds that the technology proposed for the new Russell plant also would qualify as “advanced.”

## **5. Discussion of the Project’s Air Emissions**

A generation unit using an eligible biomass fuel and advanced technology must meet the criterion of “low emissions” in order to qualify a New Renewable Generation Unit for the RPS, per the regulations at 14.05(1)(a)6. This criterion does not set specific emission targets. Rather, the threshold for eligibility is expected to become more stringent as biomass energy conversion and emission control technologies improve. In addition, that threshold might differ among fuels, technologies, and project scale – as determined by the DEP.

The proposed Russell plant in Massachusetts would be required to apply to the MA DEP, whose permitting and approval process would constitute meeting the RPS “low emissions” criterion. To the extent that it is fueled with C&D wood, the plant may produce air toxics, whose regulated levels also may be included in the DEP permit and be regarded as part of the MA RPS low emission standard for this plant.

In any case, DOER advises the company to maintain communication with the DEP, as well as to monitor Advisory Rulings and Statements of Qualification at DOER’s RPS web page.<sup>7</sup>

## **6. Summary of Ruling**

DOER has found the proposed Russell Biomass Power Plant, as currently described, to fall within the eligibility criteria for biomass-fueled New Renewable Generation Units provided in the RPS regulations at 14.05(1)(a)6. The following summarizes this finding, and it also notes several key issues and requirements for Russell to consider in its project planning. In reviewing an eventual Statement of Qualification Application for the unit, DOER will also consider these issues and requirements.

1. DOER finds the proposed fuels to meet the definition of Eligible Biomass Fuels in the RPS regulations, but possibly with some conditions. The proposed fuel stream will consist of whole tree chips and C&D wood, with the possible use of “paper conversion byproducts.” If the latter is used and if they contain non-biomass derived substances, then the plant would require a Co-firing with Ineligible Fuels Waiver, which would subject the plant to certain conditions noted in Section 3 (above), and DOER would make its Statement of Qualification Application available for public comment.

2. DOER finds that the proposed bubbling fluidized bed technology, assuming that it is new and of modern design (as must be documented in the Statement of Qualification Application), would qualify as an advanced biomass power conversion technology. This finding is consistent with the findings for fluidized bed technologies in several other recent Advisory Rulings.

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<sup>6</sup> The Advisory Rulings can be accessed via links at <http://www.mass.gov/doer/rps/advisory.htm>. The Indeck plants are already qualified for RPS under the Vintage Waiver provision at 14.05(2)

<sup>7</sup> <http://www.mass.gov/doer/rps/>.

3. The “low-emissions” qualification of the Massachusetts plant would be assured by its having to receive a BACT determination and air permit from the MA DEP, which might include air toxics limits to cover emissions from C&D wood. DOER advises Russell to work with the DEP, and to monitor DOER Advisory Rulings and other MA RPS decisions, as well as DEP air regulations and permits, subsequent to this Advisory Ruling.
4. Russell should note that, while DOER may grant a Statement of Qualification for the proposed Generation Unit, the RPS qualification of the plant always would be contingent on Russell’s obtaining any required MA air permits and on its operating the plant in compliance both with those permits and with DOER's RPS regulations, including the conditions of the plant’s Statement of Qualification.